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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,881	01/20/2004	Chih-Wei Huang	67,200-1225	3162
7590	04/05/2006		EXAMINER	
TUNG & ASSOCIATES			KACKAR, RAM N	
Suite 120			ART UNIT	PAPER NUMBER
838 W. Long Lake Road				
Bloomfield Hills, MI 48302			1763	

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/761,881	HUANG ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ram N. Kackar	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 13 January 2006.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.  
 4a) Of the above claim(s) 17-20 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-16 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of 1-16 in the reply filed on 1/13/2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1-2, 6, 9-10, 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Park et al (US 6464794).**

Park et al disclose an insert ring (edge ring Fig 2-24) of silicon (Col 5 lines 42-45) with an annular step encircling a wafer support in a plasma processing chamber.

4. **Claims 1-2, 6, 9-10, 12-14 are rejected under 35 U.S.C. 102(a) and 35 U.S.C. 102(e) as being anticipated by Kanno et al (US 20030029572).**

Kanno et al disclose an as insert ring (focus ring Fig 8-32) of silicon (Paragraph 60) with an annular step encircling a wafer support in a plasma processing chamber.

**5. Claims 1-2, 6, 9-10 and 12 are rejected under 35 U.S.C. 102(a) and 35 U.S.C. 102(e) as being anticipated by Koshiishi et al (US 20030106647).**

Koshiishi et al disclose a as insert ring (focus ring Fig 5-3) of silicon (Paragraph 30) with an annular step encircling a wafer support in a plasma processing chamber.

**6. Claims 1-2, 6, 9-10, 12-14 are rejected under 35 U.S.C. 102(a) and 35 U.S.C. 102(e) as being anticipated by Ma et al (US 20030106646).**

Ma et al disclose an as insert ring (focus ring Fig 6a-304) of silicon (Paragraph 51) with an annular step encircling a wafer support in a plasma processing chamber.

**7. Claims 1-2, 6, 9-10 and 12 are rejected under 35 U.S.C. 102(a) and 35 U.S.C. 102(e) as being anticipated by Morikage et al (US 20030066484).**

Morikage et al disclose an insert ring (focus ring Fig 6-36) of silicon (Paragraph 105) with an annular step encircling a wafer support in a plasma processing chamber.

**8. Claims 1-2, 6, 9-10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Hao et al (US 20020059981).**

Hao et al disclose an insert ring (Edge Ring Fig 3-156) of silicon (Paragraph 29) with an annular step encircling a wafer support in a plasma processing chamber.

**9. Claims 1-2, 6, 9-10, 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagaiwa et al (US 20020029745).**

Nagaiwa et al disclose an insert ring (Focus ring Fig 2-12) of silicon (paragraph 45) with an annular step encircling a wafer support in a plasma processing chamber.

**10. Claims 1-2, 6, 9-10 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Tamura et al (US 6815352).**

Tamura et al disclose an insert ring (Focus Ring Fig 2-1) of silicon (abstract) with an annular step encircling a wafer support in a plasma processing chamber.

***Claim Rejections - 35 USC § 103***

**11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**12. Claims 3-5, 7-8, 11 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al (US 6464794).**

Park et al disclose an insert ring (edge ring Fig 2-24) of silicon (Col 5 lines 42-45) with an annular step encircling a wafer support in a plasma processing chamber.

Park et al do not explicitly disclose the height of the edge ring as in Fig 2-24 but disclose that in general the height is 3-6-4.5 mm (Col 8 lines 20-30). Further the height of the taller part

could be increased by 2-4-3.0 mm (Col 10 lines 62-67). Park further teaches that the height is determined by process requirement as the focus ring height is known to affect the plasma orientation and the lift of the ring expected.

Therefore having a height of 3.5 mm of one part and of 1.5 mm of the other part would have been an obvious compromise for one of ordinary skill in the art at the time of invention.

**13. Claims 3-5, 7-8, 11 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koshiishi et al (US 20030106647).**

Koshiishi et al disclose a as insert ring (focus ring Fig 5-3) of silicon (Paragraph 30 with an annular step encircling a wafer support in a plasma processing chamber.

Koshiishi et al do not explicitly disclose the height of the edge ring as in Fig 5-3 but disclose that in general the height is 6 mm (Paragraph 35). Further as the height is determined by process requirement-since focus ring height is known to affect the plasma orientation- and the lift of the ring expected.

Therefore having a height of 3.5 mm of one part and of 1.5 mm of the other part would have been an obvious compromise for one of ordinary skill in the art at the time of invention.

**14. Claims 3-5, 7-8, 11 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al (US 6815352).**

Tamura et al disclose an insert ring (Focus Ring Fig 2-1) of silicon (abstract) with an annular step encircling a wafer support in a plasma processing chamber.

Tamura et al disclose the height of the edge ring as in Fig 2-1 to be 4mm (Col 6 lines 55-60) but do not disclose the height of the step and the body. It is well known in the art that the height is determined by process requirement, as the focus ring height is known to affect the plasma orientation and the life of the ring expected.

Therefore having a height of 3.5 mm of one part and of 1.5 mm (total 5 mm) of the other part would have been an obvious compromise for one of ordinary skill in the art at the time of invention.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ram

Ram Kackar  
Primary Examiner AU 1763